METHOD AND DEVICE FOR AUTOMATIC CONTROL OF THE FREQUENCY OF A LOCAL OSCILLATOR IN A DS-CDMA TYPE RECEIVER

Abstract of the Disclosure

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A method for controlling frequency of a local oscillator in a DS-CDMA type receiver includes transforming a known spread spectrum signal into a sampled digital signal formed of symbols with a despreaded frequency spectrum, and determining a residual frequency error f_e for each symbol including a first residual frequency error f_{e1}. The method further includes correcting the frequency of the local oscillator with the residual frequency errors, and determining an average of absolute values of a predetermined number of successive residual frequency errors. The average is compared with a threshold, and if the average is greater than or equal to the threshold, the local oscillator frequency is corrected using an error equal to $-\mathrm{sgn}(f_{e1})(1/T - |f_{e1}|)$, where sgn is the sign function, $|\quad|$ is the absolute value function and T is duration of a symbol before determining the next residual frequency error associated with the next symbol.